

## CLAIMS

### WHAT IS CLAIMED IS:

1. A method of coding moving image data composed of a plurality of frame images arranged in time series, comprising the steps of:

5 constituting a serial data string by

successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth,

said pixel data each being in a same position on each of said frame image, and

10 said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images; and  
compression coding said serial data string into coded data.

2. The method of coding a moving image according to claim 1, wherein  
said frame images constituting said moving image data is variable in number, and

15 further comprising the step of

compression coding, into coded data, data composed of said serial data string accompanied with frame information indicating the number of said frame images.

3. The method of coding a moving image according to claim 1, comprising the steps of:  
dividing said serial data string into a plurality of sub serial data strings; and  
20 compression coding said sub serial data strings into pieces of coded data.

4. The method of coding a moving image according to claim 3, comprising the step of  
further compression coding data of said plurality of pieces of coded data linked  
together.

5. The method of coding a moving image according to claim 3, wherein  
25 said sub serial data strings are compression coded in parallel.

6. The method of coding a moving image according to claim 1, wherein:  
said pixel data of said frame images is composed of a plurality of kinds of color  
information; and

said serial data string is formed according to kind of said color information.

7. The method of coding a moving image according to claim 6, comprising the steps of:  
dividing said serial data strings formed for each kind of said color information each  
into a plurality of sub serial data strings; and

compression coding said sub serial data strings into pieces of coded data.

8. The method of coding a moving image according to claim 6, wherein  
said serial data strings are compression coded in parallel.

9. The method of coding a moving image according to claim 1, comprising the steps of:  
obtaining frequency components of said serial data string;  
decreasing the compression rate of said serial data string when there are more high  
frequency components than a predetermined value; and

increasing the compression rate of said serial data string when there are less high  
frequency components than a predetermined value.

10. A method of decoding coded data into original moving image data, said coded data  
generated by coding the moving image data composed of a plurality of frame images  
arranged in time series, said coding done by: successively fetching pixel data alternately in  
order of said time series and in order of reverse time series, folding back and forth; said pixel  
data each being in a same position on each of said frame images; and said position shifting to  
a neighboring pixel data each time said fetching reaches a first or a last of said frame images  
in time series; thus constituting a serial data string; and compression coding said serial data  
string, the method comprising the steps of:

decoding said coded data to constitute said serial data string;

laying said serial data string out so as to fold back and forth at lengths each having the number of said frame images as a unit;

fetching said pixel data along a direction perpendicular to the direction the pixel data runs in time series, as pieces of pixel data of a same time; and

5 arranging said fetched pixel data into predetermined positions in frames to constitute said frame images in order of time series.

11. A method of decoding coded data into original moving image data, said coded data generated by coding the moving image data composed of a plurality of frame images arranged in time series, said coding done by: successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth; said pixel data each being in a same position on each of said frame images; and said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images in time series; thus constituting a serial data string; and compression coding data composed of said serial data string accompanied with frame information indicating the number of said frame images, the method comprising the steps of:

15 decoding said coded data to constitute said serial data string and said frame information;

laying said serial data string out so as to fold back and forth at lengths each having said frame information as a unit;

20 fetching said pixel data along a direction perpendicular to the direction the pixel data runs in time series, as pieces of pixel data of a same time; and

arranging said fetched pixel data into predetermined positions in frames to constitute said frame images in order of time series.

12. A method of decoding coded data into original moving image data, said coded data generated by coding the moving image data composed of a plurality of frame images

arranged in time series, said coding done by: successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth; said pixel data each being in a same position on each of said frame images; and said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images in time series; dividing said serial data string into a plurality of sub-serial data strings; thus constituting a serial data string; and compression coding each of said sub-serial data strings, the method comprising the steps of:

decoding each of a plurality of said coded data to constitute a plurality of said serial data strings;

linking each of said sub-serial data strings to constitute said serial data string;

laying said serial data string out so as to fold back and forth at lengths each having the number of said frame images as a unit;

fetching said pixel data along a direction perpendicular to the direction the pixel data runs in time series, as pieces of pixel data of a same time; and

arranging said fetched pixel data into predetermined positions in frames to constitute said frame images in order of time series.

13. The method of decoding a moving image according to claim 12, wherein said coded data are decoded in parallel.

14. A method of decoding total coded data into original moving image data, said total coded data generated by coding the moving image data composed of a plurality of frame images arranged in time series, said coding done by: successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth; said pixel data each being in a same position on each of said frame images; and said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images in time series; thus constituting a serial data string; dividing said serial

data string into a plurality of sub-serial data strings; compression coding each of said sub-serial data strings to constitute a plurality of pieces of coded data; and linking said plurality of pieces of coded data to further perform compression coding, the method comprising the steps of:

5            decoding said total coded data to form said plurality of pieces of coded data;  
             decoding each of a plurality of said coded data to constitute a plurality of said serial data strings;

             linking each of said sub-serial data strings to constitute said serial data string;

             laying said serial data string out so as to fold back and forth at lengths each having  
10            the number of said frame images as a unit;

             fetching said pixel data along a direction perpendicular to the direction the pixel data runs in time series, as pieces of pixel data of a same time; and

             arranging said fetched pixel data into predetermined positions in frames to constitute said frame images in order of time series.

15            15.     A method of decoding coded data into original moving image data, said coded data generated by coding the moving image data composed of a plurality of frame images arranged in time series and having image data composed of a plurality of kinds of color information, said coding done for each kind of said color information, by: successively  
20            fetching color information alternately in order of said time series and in order of reverse time series, folding back and forth; said color information each being in a same position on each of said frame images; and said position shifting to a neighboring color information each time said fetching reaches a first or a last of said frame images in time series; thus constituting serial data strings; and compression coding each of said serial data strings, the method comprising the steps of:

25            decoding each of a plurality of pieces of said coded data to constitute said serial data

string for each kind of color information;

laying each of said serial data strings out so as to fold back and forth at lengths each having the number of said frame images as a unit;

fetching said color information along a direction perpendicular to the direction the pixel data runs in time series, as pieces of color information of a same time;

arranging said fetched color information into predetermined positions in frames to constitute a frame image for each kind of said color information, in order of time series; and

linking said color frame information of a same time to constitute said frame image in time series.

16. The method of decoding a moving image according to claim 15, wherein said plurality of pieces of coded data is decoded in parallel.

17. A method of decoding coded data into original moving image data, said coded data generated by coding the moving image data composed of a plurality of frame images arranged in time series and having image data composed of a plurality of kinds of color information, said coding done for each kind of said color information, by: successively fetching color information alternately in order of said time series and in order of reverse time series, folding back and forth; said color information each being in a same position on each of said frame images; and said position shifting to a neighboring color information each time said fetching reaches a first or a last of said frame images in time series; thus constituting serial data strings; dividing said serial data string into a plurality of sub data strings; and compression coding each of said sub serial data strings, the method comprising the steps of:

decoding each of a plurality of pieces of said coded data to constitute a plurality of said sub serial data strings;

linking each of said sub serial data strings according to each kind of said color information to constitute said serial data strings;

laying each of said serial data strings out so as to fold back and forth at lengths each having the number of said frame images as a unit;

fetching said color information along a direction perpendicular to the direction the pixel data runs in time series, as pieces of color information of a same time;

5 arranging said fetched color information into predetermined positions in frames to constitute a frame image for each kind of said color information, in order of time series; and

linking said color frame information of a same time to constitute said frame image in time series.

18. A moving image coding device for coding moving image data composed of a plurality of frame images arranged in time series, wherein said device:

constitutes a serial data string by

successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth,

said pixel data each being in a same position on each of said frame image, and

said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images; and

compression codes said serial data string into coded data.

19. A moving image coding device for decoding coded data into original moving image data, said coded data generated by coding the moving image data composed of a plurality of frame images arranged in time series, said coding done by: successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth; said pixel data each being in a same position on each of said frame images; and said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images in time series; thus constituting a serial data string; and compression

coding said serial data string, wherein said device:

decodes said coded data to constitute said serial data string;

lays said serial data string out so as to fold back and forth at lengths each having the number of said frame images as a unit;

5 fetches said pixel data along a direction perpendicular to the direction the pixel data runs in time series, as pieces of pixel data of a same time; and

arranges said fetched pixel data into predetermined positions in frames to constitute said frame images in order of time series.

20. A recording medium storing a computer-readable program for coding moving image data composed of a plurality of frame images arranged in a time series,

said program including:

a program for constituting a serial data string by

successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth,

15 said pixel data each being in a same position on each of said frame image, and

said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images; and

a program for compression coding said serial data string into coded data

20 21. A recording medium storing a computer-readable program for decoding coded data into original moving image data composed of a plurality of frame images arranged in a time series, said coding done by: successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth; said pixel data each being in a same position on each of said frame images; and said position shifting to a neighboring  
25 pixel data each time said fetching reaches a first or a last of said frame images in time series;



thus constituting a serial data string; and compression coding said serial data string, said program including:

a program for decoding said coded data to constitute said serial data string;

laying said serial data string out so as to fold back and forth at lengths each having

the number of said frame images as a unit;

fetching said pixel data along a direction perpendicular to the direction the pixel data runs in time series, as pieces of pixel data of a same time; and

a program for arranging said fetched pixel data into predetermined positions in frames to constitute said frame images in order of time series.

22. A recording medium storing a computer-readable data for coding moving image composed of a plurality of frame images arranged in a time series,

said coded moving image data including:

data for constituting a serial data string by

successively fetching pixel data alternately in order of said time series and in order of reverse time series, folding back and forth,

said pixel data each being in a same position on each of said frame image, and

said position shifting to a neighboring pixel data each time said fetching reaches a first or a last of said frame images; and

data for compression coding said serial data string into coded data.